National Transportation Safety Board

Strategic Plan

Fiscal Years 2010 through 2015

National
Transportation
Safety Board

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Strategic Plan

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Fiscal Years 2010 Through 2015

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A Message from the Chairman of the NTSB

Deborah A.P. Hersman
Chairman

I am pleased to present the 2010-2015 Strategic Plan for the National Transportation Safety Board. This is an updated strategic plan—required every 3 years—and includes the NTSB strategic goals, strategic objectives, and associated performance measures for managing agency operations.

The NTSB is recognized internationally for our accident investigation experience. For over 40 years, the NTSB has been in the forefront of transportation safety issues. Now, with this updated strategic plan, the NTSB intends to be in the forefront of best government and business practices for long-range planning.

To build on the NTSB's strong agency mission, this updated plan includes a formal vision statement so that the transportation community and the public are fully aware of the future direction of the agency in our efforts to improve transportation safety. In addition, 17 strategic objectives—which were also included in the 2007-2012 Strategic Plan—have been updated with outcome-oriented statements of purpose and intent. This enhancement of the agency strategic objectives more clearly conveys how agency operations help to achieve strategic goals on an ongoing basis.

In addition, this updated strategic plan includes tables of outcome-based performance measures for each strategic goal. The NTSB is using these indicators to show transparency, accountability, and measurability of the achievement of agency outcomes, resulting in an improved gauge of success for the achievement of overall strategic goals. Ongoing changes in technology and significant budget constraints are examples of challenges the NTSB is endeavoring to overcome to ensure our work promotes additional safety.

Finally, the four strategic goals themselves have been refined to provide additional clarity and ease of understanding. We hope you find that the updated NTSB Strategic Plan provides a clear understanding of the agency, our mission and mandate, and our strategic planning process.

Sincerely,

Deborah A.P. Hersman, Chairman
January 1, 2010

Strategic Plan

Fiscal Years 2010 Through 2015

Contents

NTSB at a Glance **5**

Background, Mission, and Mandate **6**

Organizational Units **12**

NTSB Strategic Goals and Strategic Objectives **16**

Strategic Goal #1 – Accomplish Objective Investigations of Transportation Accidents **17**

- Summary 17
- Key Management Issues and Challenges 17
- Strategic Objectives 18
- Key Performance Measures 19
- Key Performance Measures Continued 20
- Discussion of Performance Measures 20

Strategic Goal #2 – From Investigations, Recommend and Advocate Actions That Will Improve Transportation Safety **23**

- Summary 23
- Key Management Issues and Challenges 23
- Strategic Objectives 24
- Key Performance Measures 26
- Key Performance Measures Continued 27
- Discussion of Performance Measures 27

Strategic Goal #3 – Outstanding Stewardship of Resources **29**

- Summary 29
- Key Management Issues and Challenges 29
- Strategic Objectives 30
- Key Performance Measures 31
- Discussion of Performance Measures 31

Strategic Goal #4 – Organizational Excellence 35
Summary 35
Key Management Issues and Challenges 35
Strategic Objectives 36
Key Performance Measures 39
Discussion of Performance Measures 40

Environmental Analysis 41
External Factors 41
Internal Factors 42

Strategic Plan Evaluation 44
Importance of Evaluation 44
Internal Controls 44
Data Reliability 45
Evaluation and the Planning Process 45
Planning Process 45
Planning Framework 46
Strategic Plan Summary 48

Other NTSB Planning Resources 49

NTSB at a Glance

Fiscal Year 2009 Information	
Established:	April 1, 1967
Number of Employees:	Headquarters: 299 Regional: 92
Products Adopted by the Board:	18 Major Reports 2 Summary Reports 1 Special Investigation Report 15 Accident Briefs
Major Accident Launches:	18
Other Accident Launches:	198
International Accident Launches:	10
Recommendations Issued:	174
Recommendations Closed:	87 Closed Acceptable Status 22 Closed Unacceptable Status
Vehicle Recorder Readouts:	374
Materials Laboratory Examination Reports:	110
Vehicle Performance Reports:	48
Internet Address:	www.ntsb.gov

NTSB Mission

The NTSB's mission is to promote transportation safety by

- maintaining our congressionally mandated independence and objectivity;
- conducting objective, precise accident investigations and safety studies;
- performing fair and objective airman and mariner certification appeals; and
- advocating and promoting safety recommendations. And
- to assist victims of transportation accidents and their families.

Vision	Values	Strategic Goals
We identify and promote lessons learned from accident investigations to help make transportation safer.	The NTSB embraces the values of transparency, accountability, and integrity in our work. We are committed to these values every day and in every way.	• Accomplish objective investigations of transportation accidents. • From investigations, recommend and advocate actions that will improve transportation safety. • Outstanding stewardship of resources. • Organizational excellence.

Background, Mission, and Mandate

The National Transportation Safety Board (NTSB) is an independent federal agency charged with determining the probable cause of transportation accidents and promoting transportation safety, and assisting victims of transportation accidents and their families. The NTSB investigates accidents, conducts safety studies, evaluates the effectiveness of other government agencies' programs for preventing transportation accidents, and reviews the appeals of enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and the U.S. Coast Guard (USCG), as well as the appeals of civil penalty actions taken by the FAA.

To help prevent accidents, the NTSB develops safety recommendations based on our investigations and studies. These are issued to federal, state, and local government agencies and to industry and other organizations in a position to improve transportation safety. Recommendations are the focal point of the NTSB's efforts to improve the safety of the nation's transportation system.

NTSB Mission:

To promote transportation safety by

- maintaining our congressionally mandated independence and objectivity;
- conducting objective, precise accident investigations and safety studies;
- performing fair and objective airman and mariner certification appeals; and
- advocating and promoting safety recommendations. And
- to assist victims of transportation accidents and their families.

History

The NTSB originated in the Air Commerce Act of 1926, in which the U.S. Congress charged the U.S. Department of Commerce with investigating the causes of aircraft accidents. Later, that responsibility was given to the Civil Aeronautics Board's Bureau of Aviation Safety, when it was created in 1940.

In 1967, Congress consolidated all transportation agencies into a new U.S. Department of Transportation (DOT) and established the NTSB as an independent agency placed within the DOT for administrative purposes. In creating the NTSB, Congress envisioned that a single organization with a clearly defined mission could more effectively promote a higher level of safety in the transportation system than the individual modal agencies working separately. Since 1967, the NTSB has investigated accidents in the aviation, highway, marine, pipeline, and railroad modes, as well as accidents related to the transportation of hazardous materials.

In 1974, Congress reestablished the NTSB as a completely separate entity, outside the DOT, reasoning that "…No federal agency can properly perform such (investigatory)

functions unless it is totally separate and independent from any other…agency of the United States." Because the DOT has broad operational and regulatory responsibilities that affect the safety, adequacy, and efficiency of the transportation system, and transportation accidents may suggest deficiencies in that system, the NTSB's independence was deemed necessary for proper oversight. The NTSB, which has no authority to regulate, fund, or be directly involved in the operation of any mode of transportation, conducts investigations and makes recommendations from an objective viewpoint.

In 1996, Congress assigned the NTSB the additional responsibility of coordinating Federal assistance to the families of aviation accident victims. While originally legislated to provide assistance following major aviation accidents, the program has expanded to provide assistance in all modes of transportation on a case-by-case basis.

In 2000, the agency embarked on a major initiative to increase employee technical skills and make our investigative expertise more widely available to the transportation community by establishing the NTSB Academy. The George Washington University Virginia campus was selected as the Academy's home. The NTSB took occupancy of the new facility in August 2003. On October 1, 2006, the name of the NTSB Academy was changed to the NTSB Training Center to better reflect the internal training mission of the facility.

Since its inception, the NTSB has investigated more than 132,000 aviation accidents and thousands of surface transportation accidents. On call 24 hours a day, 365 days a year, NTSB investigators travel throughout the country and to every corner of the world to investigate significant accidents and develop factual records and safety recommendations with one aim—to ensure that such accidents never happen again. The NTSB's Most Wanted List of Transportation Safety Improvements highlights safety-critical actions that DOT modal administrations, the USCG, and others need to take to help prevent accidents and save lives.

To date, the NTSB has issued over 12,900 safety recommendations to more than 2,500 recipients. Because the NTSB has no formal authority to regulate the transportation industry, our effectiveness depends on our reputation for conducting thorough, accurate, and independent investigations and for producing timely, well-considered recommendations to enhance transportation safety.

In 2008, the NTSB continued to push for safety improvements as 67 recommendations (for all recipients) were officially closed after being implemented. These include 27 aviation, 15 highway, 10 marine, 7 railroad, 6 pipeline, and 2 intermodal safety advances recognized by the NTSB as being compliant with our recommendations in 2008. They were officially closed with one of the following classifications: "exceeds recommended action," "acceptable action," or "acceptable alternate action." The average acceptance rate for safety recommendations remained at just over 82 percent for 2008. The range of acceptance rates by DOT modal agencies[1] over a 10-year period is shown in figure 1.

1 Department of Transportation modal agencies include the following: Federal Aviation Administration (FAA), Federal Highway Administration (FHWA), Federal Motor Carrier Safety Administration (FMCSA), Federal Railroad Administration (FRA), Federal Transit Administration (FTA), National Highway Traffic Safety Administration (NHTSA), and Pipeline and Hazardous Material Safety Administration (PHMSA).

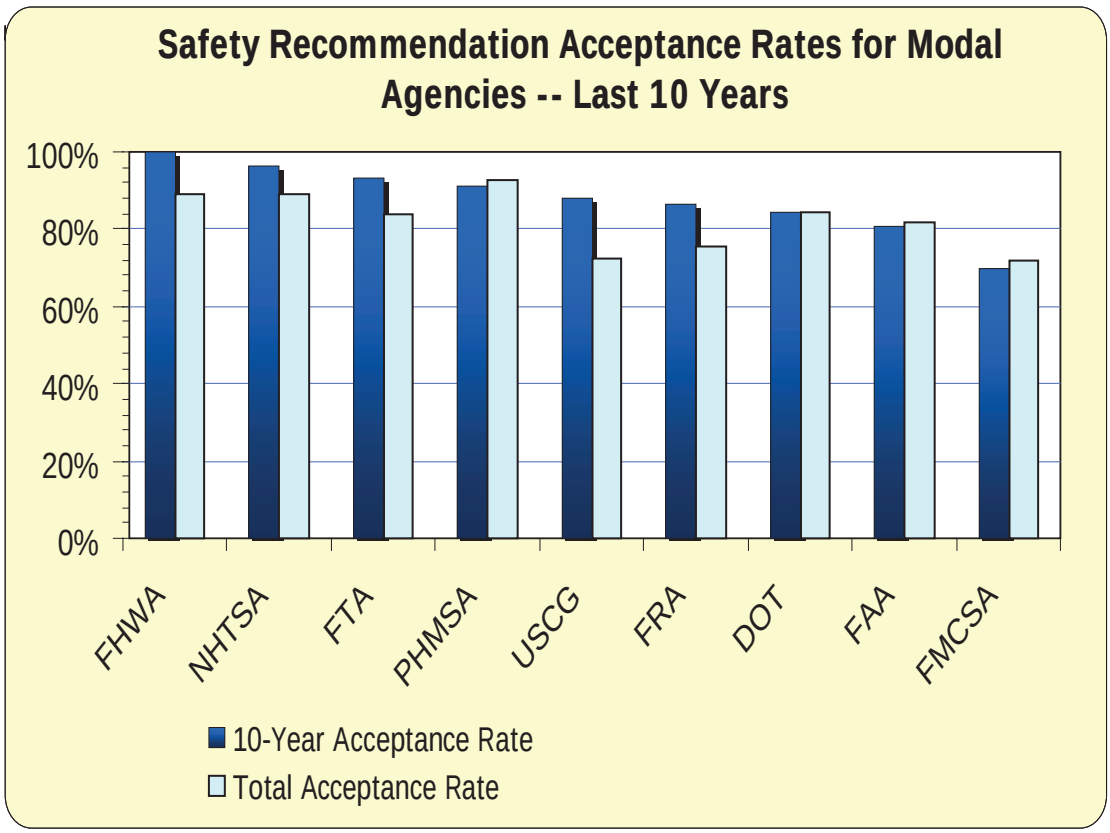


Figure 1: DOT Modal Agencies Acceptance Rate

Independence

The NTSB's status as an independent federal agency sets us apart from other stakeholders in the transportation industry. Transportation companies are motivated by financial gain and many are ultimately accountable to their shareholders. Other government agencies, for example, the FAA, the Federal Railroad Administration (FRA), the Federal Highway Administration (FHWA), and the USCG have an official role in establishing and enforcing industry regulations. The NTSB has no such interests or obligations. Our most important stakeholder is the traveling public, and we are concerned with one principal objective, *promoting transportation safety for the traveling public*.

Investigative Mandate

The NTSB is an independent Federal agency charged by Congress to investigate every civil aviation accident in the United States and significant accidents in the other modes of transportation—highway, marine, pipeline, and railroad—and to issue safety recommendations intended to prevent future accidents. The agency's authority is derived from Title 49 of the United States Code, Chapter 11, and is governed under 49 *Code of Federal Regulations*, Chapter VIII. The Board of the NTSB consists of 5 presidentially-appointed members, each confirmed by the Senate for a 5-year term. One of the Board members is appointed Chairman and confirmed a second time to this designation.

The NTSB determines the probable cause of:

- All U.S. civil aviation accidents and certain public-use aircraft accidents;
- Selected highway accidents;
- Railroad accidents involving passenger trains or any train accident that results in at least one fatality or major property damage;
- Major marine accidents and marine accidents involving a public and a nonpublic vessel;
- Pipeline accidents involving a fatality or substantial property damage;
- Releases of hazardous materials in all forms of transportation; and
- Selected transportation accidents that involve problems of a recurring nature.

NTSB staff takes an unbiased approach to each accident that the agency investigates. Local authorities, industry representatives, and other agencies are frequently called upon to participate as parties to NTSB investigations. Our only objective is to determine the probable cause of the accident and to extract lessons learned that will prevent similar accidents in the future. NTSB investigations routinely examine all factors surrounding an accident, series of accidents or serious incidents, thereby ensuring that regulatory agencies and the industry are provided a thorough and objective analysis of actual, as well as potential, deficiencies in the transportation system. The NTSB's reputation as an honest broker is an important reason why state and local governments, federal agencies, and even foreign countries welcome and encourage the NTSB to participate in important accident investigations. During 2008, the NTSB launched on several major domestic accidents shown in figure 2.

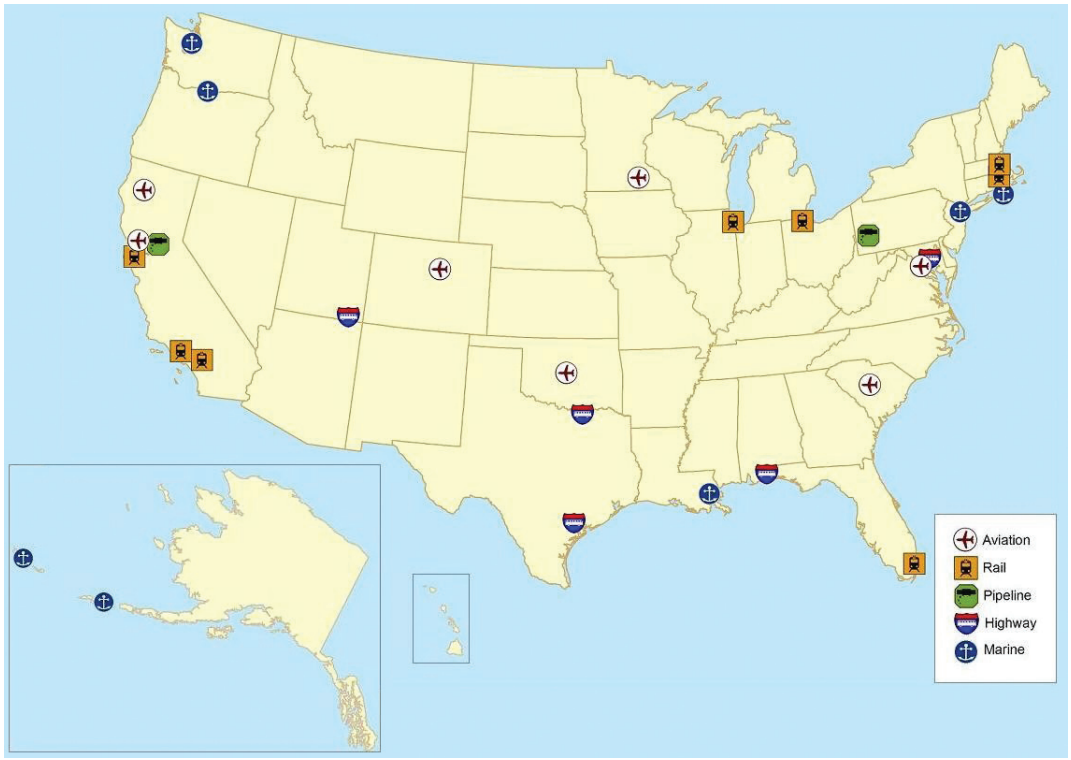


Figure 2: 2008 NTSB Major Accident Launches

The NTSB is also responsible for maintaining the government's official census of civil aviation accidents and conducts special studies of transportation safety issues of national significance. In addition, the NTSB provides investigators to serve as U.S. accredited representatives, as specified in international treaties, for aviation accidents overseas involving U.S.-registered aircraft or involving aircraft or major components of U.S. manufacture. Figure 3 shows the NTSB's participation in international aviation accident investigations during 2008.

Figure 3: Map showing International Aviation Launches during 2008

Actions to correct deficiencies that contribute to accidents are often identified early in the investigative process. The NTSB strongly supports and encourages voluntary efforts that effect safety changes and works with parties to implement such changes. In other situations, the NTSB invokes a more formal process of issuing safety recommendations, asking government agencies, parties to the investigation, or other entities to take action to improve safety. Some of these recommendations are made during the accident investigation. In other cases, the NTSB makes safety recommendations at the conclusion of the investigative process and incorporates them into the official accident reports, and in some cases in safety studies, adopted by the five-member Board.

Other Important Mandates

In addition to our central role as accident investigators, we provide three other important functions. First, we maintain the integrity of airman and mariner safety enforcement programs. We provide a fair and impartial adjudicatory process for appeal of FAA certificate actions and denials, and some civil penalty actions through proceedings before our administrative law judges and appellate review of the judges' decisions. The five-member Board reviews USCG certificate actions.

Secondly, the NTSB publishes the Most Wanted List of Transportation Safety Improvements each year. The brochure highlights important safety actions that the DOT, the USCG, and States need to take to prevent accidents and save lives. The list is divided into issue areas and includes all transportation modes.

Finally, we have responsibility for coordinating communication with and assistance to the family members of accident victims. The office responsible for this effort is called Transportation Disaster Assistance (TDA). Since its inception in 1996, and through 2008, TDA personnel have launched on 142 accidents and assisted families at those accident sites.

Organizational Units

The Office of Aviation Safety (AS): The mission of AS is to accomplish the following: 1) Investigate all civil domestic air carrier, commuter, and air taxi accidents; in-flight collisions; fatal and nonfatal general aviation accidents; and certain public-use aircraft accidents, 2) Participate in the investigation of major airline crashes in foreign countries that involve U.S. carriers or U.S.-manufactured or -designed equipment to fulfill U.S. obligations under International Civil Aviation Organization agreements, and 3) Conduct investigations of safety issues that extend beyond a single accident to examine specific aviation safety problems from a broader perspective.

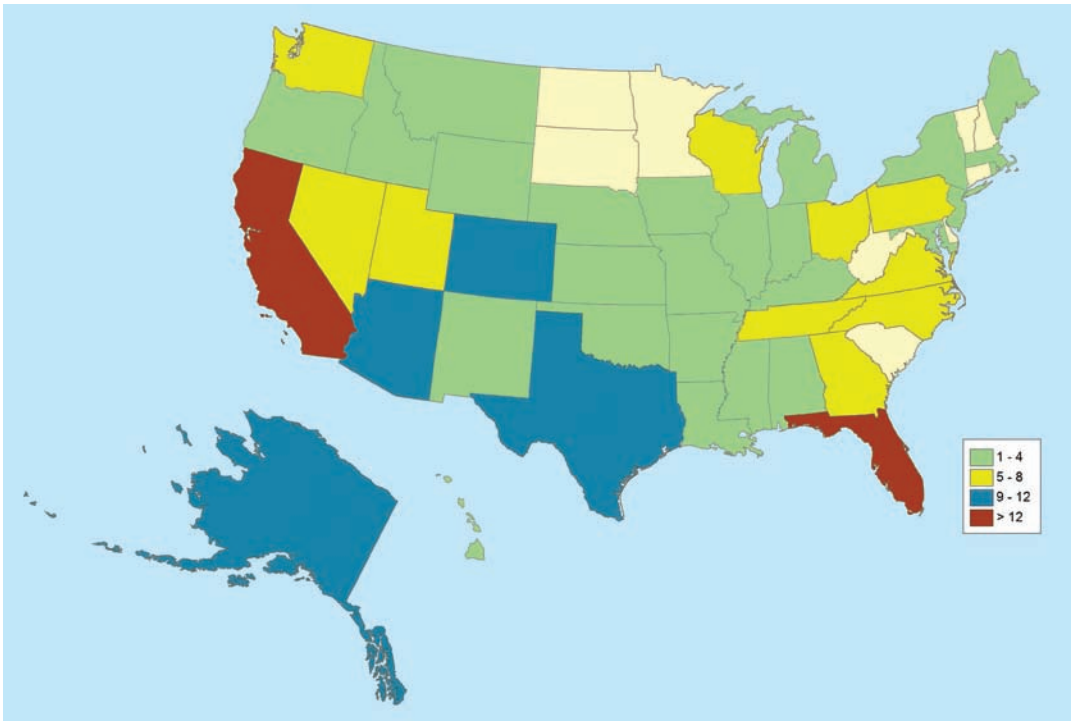


Figure 4: Map showing Regional Aviation Launches During 2008

AS has the responsibility for investigating domestic aviation accidents and incidents (about 1,750 annually) and for proposing probable cause for the Board's approval. Figure 4 depicts the range of volume in each state of regional accidents for which NTSB has overall responsibility. In conjunction with other offices within the NTSB, the office also works to formulate recommendations to prevent the recurrence of similar accidents and incidents, and to otherwise improve aviation safety. The Office of Aviation Safety includes a number of regional offices spread throughout the United States to ensure that NTSB personnel are within closer proximity to potential accident sites.

The Office of Highway Safety (HS): HS investigates those accidents that have a significant impact on the public's confidence in highway transportation safety, generate high public

interest and media attention, or highlight national safety issues. HS staff investigates accidents involving issues with wide-ranging safety significance, such as collapses of highway bridge structures, fatalities on public transportation vehicles (such as buses and vans), and collisions at highway/rail grade crossings. In addition to these more catastrophic accident events, HS also conducts studies based on trends emerging from NTSB accident investigations and from other research and accident data to identify common risks or underlying causes of accidents.

The Office of Marine Safety (MS): MS investigates major marine accidents on navigable waters of the United States, accidents involving U.S. merchant vessels anywhere in the world, as well as accidents involving U.S. public and nonpublic vessels. In addition, MS investigates select marine accidents that involve public transportation or those of a recurring nature. The USCG conducts the preliminary investigation of all marine accidents and notifies the NTSB if an accident is a major marine accident. The NTSB will then conduct an independent investigation, participate in a joint NTSB/USCG investigation, or request the USCG to conduct an investigation on behalf of the NTSB.

The Office of Railroad, Pipeline and Hazardous Materials Investigations (RPH): RPH investigates accidents involving railroads, pipelines, and the transportation of hazardous materials. On the basis of the investigations conducted by this office, the NTSB issues safety recommendations to federal and state regulatory agencies, industry and safety standards organizations, carriers and pipeline operators, equipment and container manufacturers, producers and shippers of hazardous materials, and emergency response organizations.

The Office of Research and Engineering (RE): RE provides technical support to accident investigations and conducts safety studies that examine safety issues in all modes of transportation. The NTSB's Flight Data Recorder, Cockpit Voice Recorder, and Materials Laboratories are located in the RE office. The office also provides annual statistical reviews of aviation accidents.

The Office of Safety Recommendations and Advocacy (SRA): SRA includes the divisions of Safety Recommendations, Safety Advocacy, and Transportation Disaster Assistance. The office is responsible for coordinating strategies for implementing the agency's safety recommendations and supporting victims of transportation disasters, and their families. The office also supports the NTSB's activities and responsibilities as a member of the International Transportation Safety Association, an organization of independent accident investigation agencies. As the NTSB's most important product, safety recommendations are vital to the agency's basic accident prevention role. Also, SRA has responsibility for coordinating communication with and assistance to the family members of accident victims. The office within SRA responsible for this effort is called Transportation Disaster Assistance (TDA).

Office of Administration (AD): AD coordinates and manages the infrastructure and support activities for the agency. This office provides human resource management, employee and labor relations, facilities management and support, and acquisition and leasing management services. In addition, this organization manages and provides physical inventory, shipping and receiving, telecommunications, and management of the NTSB

hearing room and conference center. Work is carried out in three divisions: Facilities Operations, Acquisition, and Human Resources

Office of Administrative Law Judges (ALJ): ALJ serves as the "court of appeals" for airmen and mariners who are facing the loss or suspension of their licensing certificates, or the imposition of a civil penalty.

Office of Chief Information Officer (CIO): CIO provides strategic direction and operational support for the NTSB's information systems, and develops and distributes programs and products for use by the NTSB and the public.

Office of Chief Financial Officer (CFO): CFO manages the NTSB financial resources, develops the Board's budget requests for submission to the Office of Management and Budget and Congress, and executes the budget for resources appropriated to the Board by Congress. The Office of the Chief Financial Officer also prepares the agency financial statements required by the Accountability of Tax Dollars Act, oversees the agency property and inventory control programs, and analyzes the fee structure for services that the agency provides on a reimbursable basis. Additionally, the Chief Financial Officer is responsible for ensuring the NTSB's compliance with the Federal Managers' Financial Integrity Act.

Office of General Counsel (GC): GC advises, assists, and represents the National Transportation Safety Board in support of its activities. As the legal advisor to the NTSB, it also has responsibility for determining legal policy for the agency.

Office of Management (MD): The Office of Management provides overall leadership for the management of the agency, including production, strategy, and support functions. The MD's office ensures NTSB resources are allocated appropriately so that NTSB performs its mission to promote transportation safety in the most cost effective manner. The following divisions are included within the Office of Management under the leadership of the Managing Director: Public Affairs, Quality Assurance, Strategic Management, and Safety and Health.

The NTSB Training Center: The NTSB Training Center is an organizational component of the Office of Management. The Training Center is responsible for internal staff training, training plans, and workforce development programs. This program provides support for other training initiatives at the NTSB's facility in Ashburn, Virginia. The Training Center provides training opportunities for all NTSB employees and others from the transportation community through a variety of course offerings. The core curriculum has been and continues to be key investigative courses that focus on competencies that are important to safety investigations.

National Transportation Safety Board

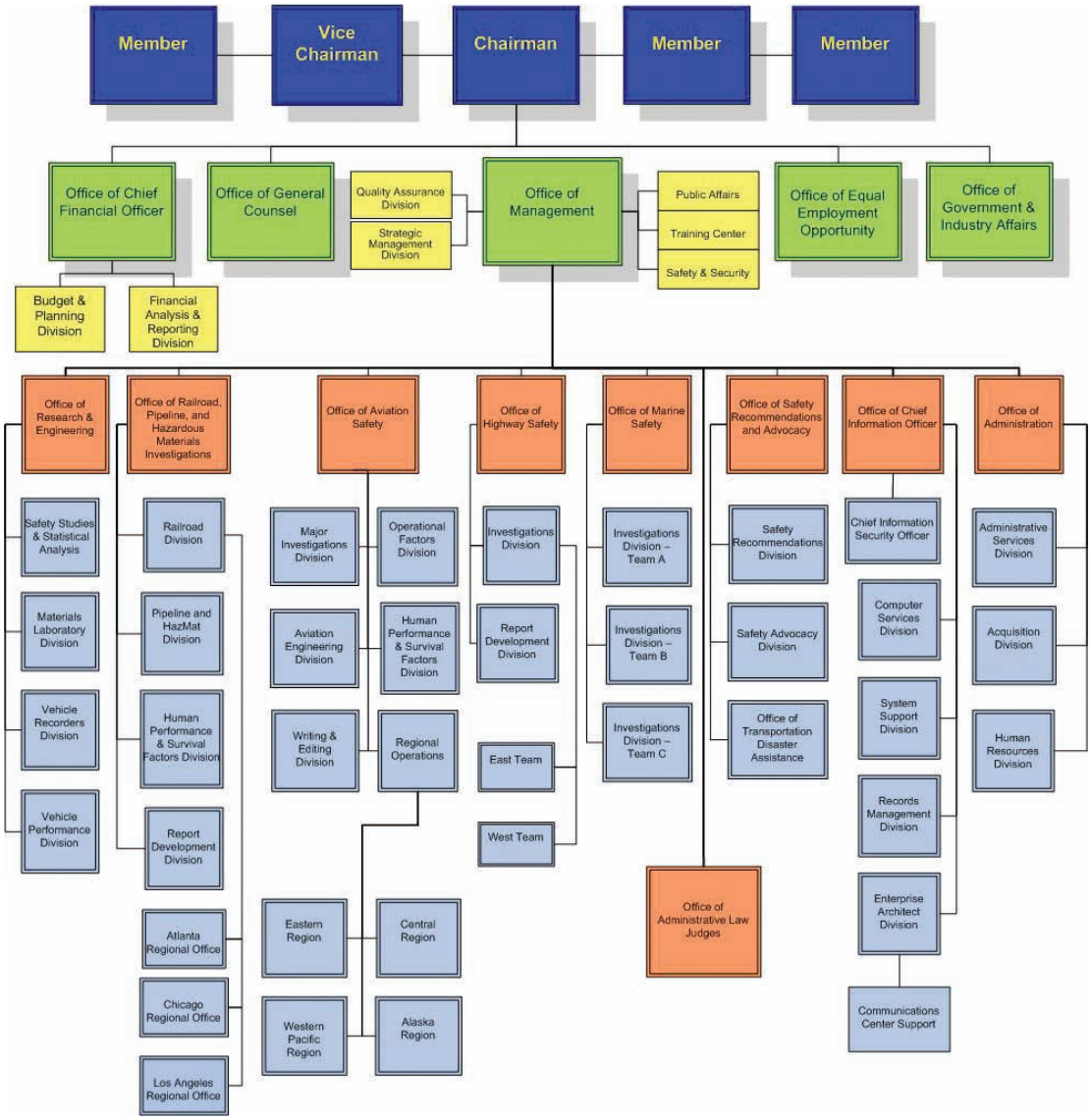


Figure 5: NTSB Organizational Chart

Strategic Goal #1

Accomplish Objective Investigations of Transportation Accidents

Strategic Goal #2

From Investigations, Recommend and Advocate Actions that will Improve Transportation Safety

Strategic Goal #3

Outstanding Stewardship of Resources

Strategic Goal #4

Organizational Excellence

NTSB Strategic Goals and Strategic Objectives

Strategic Goal	Strategic Objective
Accomplish Objective Investigations of Transportation Accidents	Make Judicious Selections of Accidents to Investigate in Each Transportation Mode
	Appropriately Scale the Investigative Response to Accidents
	Develop and Maintain State-of-the-Art Investigative and Procedural Tools for Accident Investigations
	Ensure Effective Coordination and Delivery of Transportation Disaster Assistance to Accident Victims
From Investigations, Recommend and Advocate Actions that will Improve Transportation Safety	Provide Objective and Independent Advice on Transportation Safety Issues
	Engage in Outreach with the Transportation Community to Advance Safety
	Advocate the Implementation of Safety Recommendations with Emphasis on the Most Wanted List of Transportation Safety Improvements
	Constructively Affect the Transportation Industry
	Improve Investigative Readiness by Identifying Emerging Safety Issues
	Maintain a Fair and Expeditious Appeals Process for Airmen and Mariners
Outstanding Stewardship of Resources	Employ Project Management Best Practices to Maximize the Effective Use of Agency Resources while Maintaining High Quality
	Effectively Use the Allocated Funds to Execute the Mission
	Utilize Effective Information Technology to Accomplish the Organization's Mission
Organizational Excellence	Integrate Long-Range Planning in All Elements of NTSB Business
	Align and Improve Human Capital Planning
	Maintain a Competent and Effective Workforce through Targeted Training and Employee Development
	Foster Effective Internal Communications

Strategic Goal #1 – Accomplish Objective Investigations of Transportation Accidents

Summary

Strategic Goal 1 reflects the core mission of the NTSB and is divided into the following strategic objectives:

- Make judicious selections of accidents to investigate in each transportation mode;
- Appropriately scale the investigative response to accidents;
- Develop and maintain state-of-the-art investigative analytic and procedural tools for accident investigations; and
- Ensure effective coordination and delivery of transportation disaster assistance to accident victims.

Although the respective performance of all NTSB offices can influence Strategic Goal 1, there is particular emphasis on the modal investigative offices to ensure this goal and its strategic objectives are met. This strategic goal focuses on the NTSB's key challenge to identify those accidents in each transportation mode that represent the most important targets of investigative opportunity and determine the appropriate scope and scale of such investigations. Accomplishing the strategic objectives for this goal will ensure effective and efficient investigation of transportation accidents and incidents and foster a transportation industry that is better prepared to address safety issues.

Key Management Issues and Challenges

The cost of transportation accidents to society is significant and the growth in transportation system activity in the United States will intensify the problem. Accompanying this growth are enormous increases in the system's complexity which must be addressed with techniques and methods of accident investigation that are equally complex. In order to conduct thorough accident investigations, NTSB investigators must stay abreast of the latest technology available in the transportation industry; this requires substantial and continuing training. The NTSB's challenge is to identify the available resources and staff to ensure and provide training in these areas. Another challenge is the difficulty in scheduling training due to the number, occurrence and timing of accidents and the limited number of investigators. Specific to aviation, the number of major airline accidents worldwide has increased and aviation safety staff participates in an average of 19 major foreign accident investigations every year. This presents a particular challenge since the office must also continue to meet its mandate to investigate all aviation accidents in the United States.

A key challenge for the NTSB is to identify those accidents in each transportation mode that represent the most important targets of investigative opportunity and to determine the appropriate scope and scale of such investigations. This selection process must balance the significance of the safety issues involved in these accidents against the limited investigative resources available to the NTSB and the depth of the investigation required to develop the safety issues. Overall, accomplishing objective accident investigations is a critical component of our mission, and it is done with transparency, accountability, and integrity; the core values of the agency vision.

Strategic Objectives

1. Make Judicious Selections of Accidents to Investigate in Each Transportation Mode

The resources available to the NTSB do not permit us to investigate every accident in every mode. We will judiciously determine the significance of accidents and balance that against the level of investigative effort that would be necessary in each occurrence, which may mean, in some cases, not conducting an investigation. This selection process requires careful monitoring of accident events in each mode and a careful evaluation of safety issues by technical experts in each modal office. After this evaluation is complete, we will select accidents in which we launch on a case-by-case basis to ensure the maximum potential value to increase transportation safety.

2. Appropriately Scale the Investigative Response to Accidents

We will evaluate and refine our ability to establish the proper scope of investigative activity and to respond appropriately during both the on-scene and follow-up phases of accident investigations. Included in these assessments will be a determination of the level of documentation and report development, including expedited report formats, required for each case. Based on this scaling, each investigation will result in an appropriate level of reporting and issued recommendations to promote positive safety outcomes.

3. Develop and Maintain State-of-the-Art Investigative and Procedural Tools for Accident Investigations

The nature of the NTSB's mission and mandate demands that the agency be operationally sophisticated and fully equipped to conduct increasingly complex investigations in the 21st century. We will refine and enhance investigative techniques and procedural tools that are integral to our accident investigations. We also will ensure that our investigators, engineers, and professionals are equipped with and trained to use new tools and techniques that will keep us on the cutting edge of investigation science and technology.

4. Ensure Effective Coordination and Delivery of Transportation Disaster Assistance to Accident Victims

In addition to our investigative response, NTSB coordinates public and private support response in the wake of transportation disasters for all modes of transportation. The Transportation Disaster Assistance (TDA) Team stands ready to help survivors, families of victims, communities, and commercial carriers deal with transportation disasters. TDA staff will provide an Incident Command Liaison (ICL) to efficiently coordinate the agency's response and investigation with the on-scene emergency response. An ICL will be sent for all Major Aviation accidents and Rail accidents, as legislated; as well as other modes as needed. TDA staff launched to fulfill family assistance and victim identification duties free the on-scene accident investigators from handling these functions, thus providing a more efficient on-scene presence.

Key Performance Measures

Strategic Objective	Performance Measure		FY 08 Results	FY 09 Target	FY 09 Results	FY 10 Target	Performance Measure Type
1.1 Make Judicious Selections of Accidents to Investigate in Each Transportation Mode	Utilize launch criteria for selected modes		Yes	Yes	Yes	Yes	Output[2]
1.2 Appropriately Scale the Investigative Response to Accidents	Number of products adopted by the Board including public hearing	AS	7	9	10	6	Output
		HS	4	5	5	4	
		MS	3	3	4	5	
		RPH	6	6	6	5	
	Average time to complete Board-adopted products and hearings	AS	N/A	15 months	13 months	17 months	Efficiency
		HS	N/A	15 months	15 months	20 months	
		MS	N/A	15 months	17 months	14 months	
		RPH	N/A	15 months	17 months	15 months	

2 Output performance measures are specific products or deliverables that are the end result of a set of activities. Outcome performance measures indicate public benefits or results that assess quality and effectiveness of an agency's performance. Efficiency measures are indicators of agency productivity.

Key Performance Measures continued

Strategic Objective	Performance Measure	FY 08 Results	FY 09 Target	FY 09 Results	FY 10 Target	Performance Measure Type
1.3 Develop and Maintain State-of-the-Art Investigative and Procedural Tools for Accident Investigations	Develop a Pilot Portal for Accident Investigations (participating modal offices AS and HS)	N/A	N/A	N/A	1 Portal	Output
1.4 Ensure Effective Coordination and Delivery of Transportation Disaster Assistance to Accident Victims	Percent of Incident Command Liaison support provided to major aviation accident investigations as legislated	N/A	100%	100%	100%	Outcome
	Percent of family assistance and victim ID support provided to non-legislated investigations as requested	N/A	50%	100%	50%	Outcome

Discussion of Performance Measures

For Strategic Goal 1, the NTSB is utilizing performance measures which ultimately lead to actions that impact on the transportation industry. Specifically, the production of reports in a timely manner ensures that necessary recommendations can be developed and issued to create the largest safety outcomes in the transportation industry. Since regulatory agencies need time to implement our recommendations, the NTSB works diligently to ensure that our process requires the minimum amount of time while still maintaining investigative quality. This allows for appropriate amounts of time for implementation by modal agencies, leading to efficient and effective issuance of guidance and regulation related to NTSB findings. Recent data for report production and timeliness show improvements in these key areas, with the anticipation that report production goals will continue to be met in the future. Agency initiatives in place will ensure that report production goals will be met in the future. Going forward, we will allocate sufficient resources and develop procedures to continue to increase report production and productivity. This will include decreasing the time to produce reports with added emphasis on electronic publication. By utilizing state-of-the-art processes to publish our investigative findings in a timelier manner, we will enhance our impact on the transportation industry. Finally, we believe that our on-site support to victims and family members is an important aspect for this strategic goal and the performance measures associated with this support clearly demonstrate our commitment to transportation disaster assistance.

Strategic Goal #2

NTSB Most Wanted List 2009

NTSB MOST WANTED LIST

AVIATION: The Federal Aviation Administration should:

Improve Safety of Emergency Medical Services Flights
- Conduct all flights with medical personnel on board in accordance with commuter aircraft regulations.
- Develop and implement flight risk evaluation programs.
- Require formalized dispatch and flight-following procedures including up-to-date weather information.
- Install terrain awareness and warning systems on aircraft.

Improve Runway Safety
- Give immediate warnings of probable collisions/incursions directly to cockpit flight crews.
- Require specific air traffic control clearance for each runway crossing.
- Install cockpit moving map displays or automatic systems to alert pilots of attempted takeoffs from taxiways or wrong runways.
- Require landing distance assessment with an adequate safety margin.

Reduce Dangers to Aircraft Flying in Icing Conditions
- Use current research on freezing rain and large water droplets to revise the way aircraft are designed and approved for flight in icing conditions
- Apply revised icing requirements to currently certificate
- Require that airplanes with pneumatic deice boots activ enters icing conditions.

Improve Crew Resource Management
- Require commuter and on-demand air taxi flight c management training.

Require Image Recorders
- Install crash-protected image recorders in cockpits to g to solve complex accidents.

Reduce Accidents and Incidents Caused by Human F
- Set working hour limits for flight crews, aviation mec based on fatigue research, circadian rhythms, and slee
- Develop a fatigue awareness and countermeasures pr

MARINE: The U.S. Coast Guard should

Reduce Accidents and Incidents Caused by Human F
- Set working hour limits for mariners based on fatigue sleep and rest requirements.

NTSB ACTION/TIMELINESS CLASSII

- Unacceptable response
- Acceptable response, progressing slowly
- Acceptable response, progressing in a timely manne

Actions needed by Federal Agencies

HIGHWAY: The Federal Motor Carrier Safety Administration should:

Restrict Use of Cellular Telephones
- Prohibit cellular telephone use by commercial drivers of school buses and motorcoaches, except in emergencies.

Require On-board Electronic Recorders
- Require all interstate commercial vehicle carriers to use electronic on-board recorders to collect data on both driver hours of operation and accident conditions.

Improve Safety of Motor Carrier Operations
- Prevent motor carriers from operating if they put vehicles with mechanical problems on the road or unqualified drivers behind the wheel.

Prevent Medically Unqualified Drivers from Operating Commercial Vehicles
- Establish a comprehensive medical oversight program for interstate commercial drivers.
- Ensure that medical examiners are qualified.
- Track all medical certificate applications.
- Enhance oversight and enforcement of invalid certificates
- Provide mechanisms for reporting medical conditions.

The National Highway Traffic Safety Administration should:

Prevent Collisions by Using Enhanced Vehicle Safety Technology
- Require adaptive cruise control and collision warning system standards for all new passenger and commercial vehicles.

Enhance Protection of Motorcoach Passengers
- Redesign motorcoach window emergency exits so they can be easily opened.
- Issue standards for stronger bus roofs; require them in new motorcoaches.
- Devise new standards to protect motorcoach passengers from being thrown out of their seats or ejected when a bus sustains an impact or rolls over.

Enhance Protection of School Bus Passengers
- Devise new standards to protect school bus passengers from being thrown out of their seats or ejected when a bus sustains an impact or rolls over.

PIPELINE: The Pipeline and Hazardous Materials Safety Administration should:

Reduce Accidents and Incidents Caused by Human Fatigue
- Set working hour limits for pipeline controllers based on fatigue research, circadian rhythms, and sleep and rest requirements.

** This recommendation requires action by both the FAA and the National Air Traffic Controllers Association.*

*** This recommendation also issued to National Air Traffic Controllers Association.*

Strategic Goal #2 – From Investigations, Recommend and Advocate Actions that will Improve Transportation Safety

Summary

Because the NTSB's mission is to promote transportation safety, Strategic Goal 2, which impacts the safety of the entire transportation system, cascades into strategic objectives that emphasize outreach and advocacy. Leveraging our unique position in the safety industry, the NTSB believes it is necessary to provide leadership to the transportation community and to ensure emerging safety issues are being addressed and political leadership is aware of public policy implications. To achieve this goal, Strategic Goal 2 has the following objectives:

- Provide objective and independent advice on transportation safety issues;
- Engage in outreach with the transportation community to advance safety;
- Advocate the implementation of safety recommendations with emphasis on the Most Wanted List of Transportation Safety Improvements;
- Constructively affect the transportation industry;
- Improve our investigative readiness by identifying emerging safety issues; and
- Maintain a fair and expeditious appeals process for airmen and mariners.

In implementing these objectives, the agency informs and involves the Congress in the NTSB's mission and promotes agreement by industry stakeholders on the most pressing safety issues in the transportation industry. Furthermore, this strategic goal emphasizes the need for the NTSB to promote an understanding of the Most Wanted List of Transportation Safety Improvements where identified areas of risk can lead to accidents. Our planned actions include actively working with Congress, other government agencies, and industry groups to bring about a safer transportation system for the future, based on our current knowledge of safety issues. We also need to stay abreast of emerging safety issues so that our investigative readiness is never compromised. Moreover, safe transportation relies on qualified and licensed operators of aircraft and surface transportation vehicles. Consequently, this strategic goal includes a fair appeals process for airmen and mariners which ensures a thorough adjudication and that those licensed to operate in transportation modes that carry the American public posses the highest standards of safety and professionalism.

Key Management Issues and Challenges

The nation's level of transportation activity, which highly correlates with its level of economic activity, continues to increase. As our skies, highways, waterways, and railways become more congested, the potential for transportation accidents increases. With limited

resources, the NTSB is challenged to identify ways to address implementation of its open safety recommendations, including the 7 issue areas on the federal portion of the Most Wanted List. In addition, another area of concern is increasing the NTSB's presence in state legislatures in order to elevate the priority of highway safety at the state level. The challenge is ensuring that the high priority of these issues is fully understood at the state level.

Finally, the length and complexity of the rulemaking process has resulted in federal agencies frequently not taking timely actions recommended by the NTSB. The NTSB is challenged to ensure that the rulemaking process, which can take years, does not hamper the successful implementation of recommendations. Working with the Congress, other government agencies, and industry groups, the NTSB takes an active role in leading efforts for a safer transportation system. In working to overcome such challenges, NTSB advocacy and outreach work has resulted in twenty safety recommendations on the federal portion of the Most Wanted List having been successfully implemented during a five-year period ending calendar year 2008. In fiscal year 2009, 35 legislative and regulatory changes were implemented related to safety recommendations on the state portion of the Most Wanted List, reflecting our outcomes from our initiatives in this area.

Strategic Objectives

1. Provide Objective and Independent Advice on Transportation Safety Issues

We will work with Congress and congressional staff to advance important issues related to the NTSB's transportation safety mission. This effort will focus on enhanced understanding of our core mission work and any other associated activities intended to move or influence understanding of and action on transportation safety issues by congressional stakeholders. We will utilize a number of approaches for Congress to gain understanding of our mission and safety issues, including in-person outreach and published reports, such as the *NTSB Annual Report to Congress*.

2. Engage in Outreach with the Transportation Community to Advance Safety

NTSB staff will be active members of the transportation community to promote our recommendations and positions on safety issues. We will participate on technical committees and will speak at industry conferences to increase the community's understanding of safety issues, creating partnerships with stakeholders to improve safety. We will take special care to ensure that our activities associated with this strategy enhance our reputation as objective and thorough accident investigators. Finally, we will utilize the Internet to further engage with the transportation community and the traveling public.

3. Advocate the Implementation of Safety Recommendations with Emphasis on the Most Wanted List of Transportation Safety Improvements

Through advocacy activities at the federal and state levels, we will press for the adoption of those recommendations that will have the most significant impact on improving transportation safety, including those on our Most Wanted List of Transportation Safety Improvements.

We will undertake an initiative to focus on the most important safety issues—those with the greatest potential to save lives. Our planned action is to develop an advocacy plan that outlines a mix of public, congressional, governmental, and industry activities that will increase the likelihood of positive change for each issue on the Most Wanted List. We will also continue our regular meetings with the DOT modal agencies to work for implementation of all our open recommendations.

4. Constructively Affect the Transportation Industry

Through recommendations issued in accident reports, safety studies, and other products, the NTSB will provide concrete and timely advice to improve transportation safety. With almost 13,000 recommendations issued to date, the NTSB has contributed to significant results in all transportation modes. These recommendations have directly resulted in the transportation industry's being the safest it has ever been. Our investigative process involves the development of factual records and safety recommendations with one aim—to ensure that such accidents never happen again. This strategic objective showcases the NTSB's proactive and constructive approach in achieving positive safety outcomes, with emphasis on legislative, regulatory, and enforcement action.

5. Improve Investigative Readiness by Identifying Emerging Safety Issues

To focus attention on important transportation safety issues, we will continue to develop and update an Emerging Issues List. Distinct from the existing NTSB Most Wanted List of Transportation Safety Improvements, the Emerging Issues List tracks key safety issues, including those uncovered through accident investigations, outreach activities, and NTSB public forums. Each NTSB investigative office will contribute issues annually to the list. The Office of Research and Engineering will have responsibility for compiling and updating the list.

6. Maintain a Fair and Expeditious Appeals Process for Airmen and Mariners

The NTSB serves as the "court of appeals" for airmen and mariners who are facing the loss or suspension of their licensing certificates, or the imposition of a civil penalty. We will promote transportation safety by adjudicating airman appeals of certificate actions and denials, providing due process to those affected and ensuring the integrity of the aviation and maritime safety enforcement system. This strategic objective demonstrates NTSB values of integrity, objectivity, and thoroughness in our work.

Key Performance Measures

Strategic Objective	Performance Measure	FY 08 Results	FY 09 Target	FY 09 Results	FY 10 Target	Performance Measure Type
2.1. Provide Objective and Independent Advice on Transportation Safety Issues	Congressional requests responded to in a timely manner	N/A	Baseline	Baseline	10 days	Efficiency
2.2 Engage in Outreach with the Transportation Community to Advance Safety	Update and enhance NTSB public website to improve outreach	N/A	N/A	Enhanced Pages	Enhance website	Outcome
2.3 Advocate the Implementation of Safety Recommendations with Emphasis on the Most Wanted List of Transportation Safety Improvements	Number of successfully implemented Federal Most Wanted List recommendations within the last 5 years[4]	16	8	20	20	Outcome
	Number of changes to regulations or new legislation that address the NTSB's State Most Wanted List recommendations	21	7	35	10	Outcome
2.4 Constructively Affect the Transportation Industry	Percentage of Regional Aviation Investigations that result in documented safety improvements	N/A	10%	30%	30%	Outcome
	Rulemaking or other legislative action proposed by the FAA to improve safety on issues identified in NTSB safety recommendations	N/A	N/A	N/A	6 actions	Outcome
	Rulemaking or other proposed action by the FRA or other regulatory agencies to improve safety on issues identified in NTSB safety recommendations	N/A	1 action	6 actions	1 action	Outcome
	Percentage of Major Highway Investigations that result in documented safety improvements	N/A	100%	100%	100%	Outcome

3 Federal Most Wanted List data is tracked on a calendar year basis.

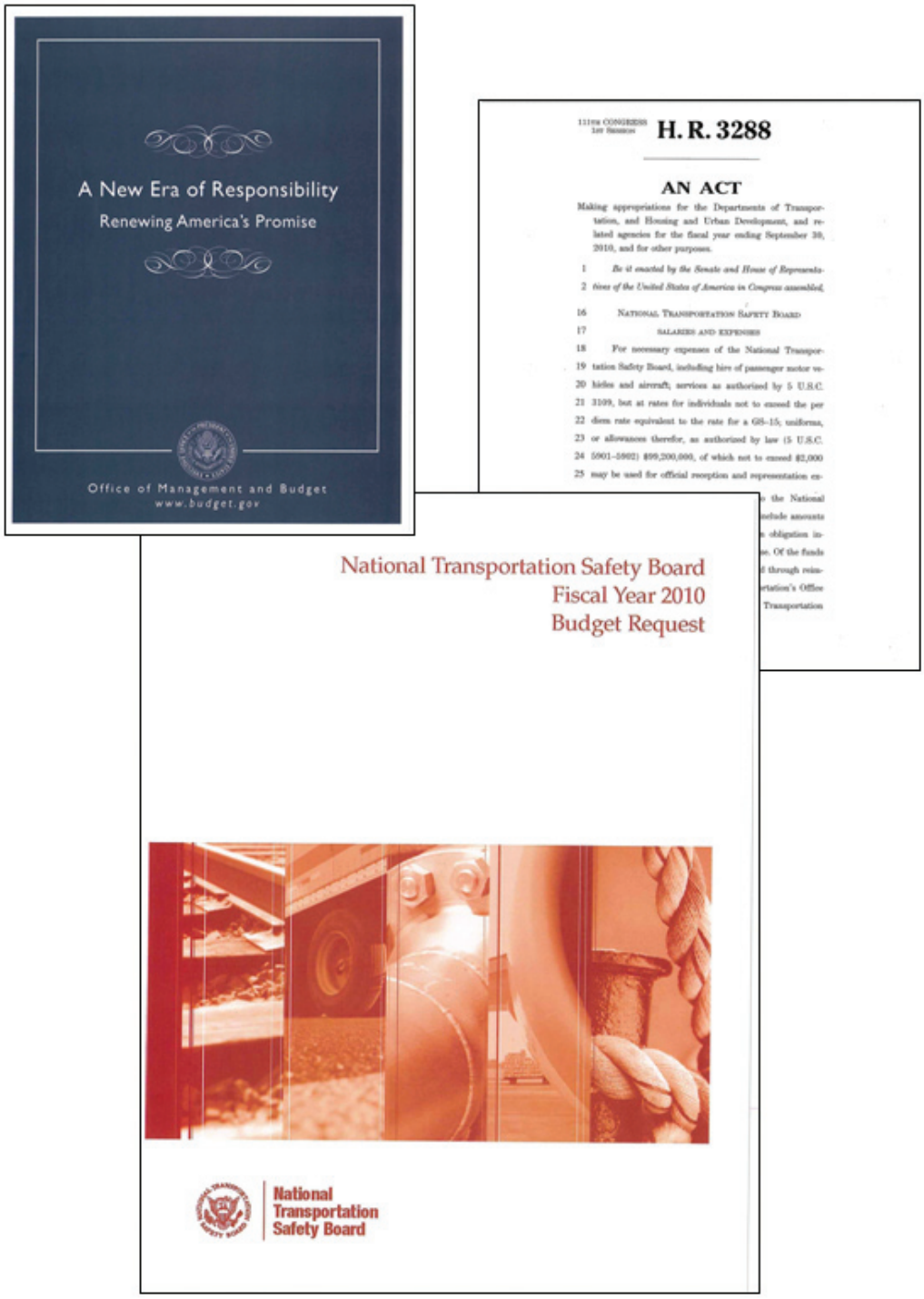
Key Performance Measures continued

Strategic Objective	Performance Measure	FY 08 Results	FY 09 Target	FY 09 Results	FY 10 Target	Performance Measure Type
2.4 Constructively Affect the Transportation Industry	Percentage of recommendations to the Coast Guard and the maritime industry that are adopted	N/A	N/A	72.6%	80%	Outcome
2.5 Improve Investigative Readiness by Identifying Emerging Safety Issues	Develop and publish list of Emerging Transportation Safety Issues	List Published	Publish List	List Published	Publish List	Outcome
2.6 Maintain a Fair and Expeditious Appeals Process for Airmen and Mariners	Percentage of total cases disposed of during the fiscal year	75%	50%	77%	75%	Outcome

Discussion of Performance Measures

The key performance measures for this goal focus on outreach and advocacy of recommendations and the Most Wanted List, (as well as Emerging Transportation Safety Issues). We have made significant efforts to focus on measuring the success of intermediate and long-term outcomes for this goal. Since it is unlikely that items would be removed from the Federal Most Wanted List in a single year, in part because of the protracted length for regulatory changes, we believe that measuring changes over a 5-year period portrays an accurate reflection of our achievements in this area. This is considered a long-term outcome. We are pleased that 20 safety recommendations on the Federal portion of the Most Wanted List have been successfully implemented in the 5 years proceeding calendar year 2009. In addition, on a year-by-year basis, it is possible to measure some progress in rulemaking or interim steps taken, and, as such, the NTSB considers such results to be intermediate or short-term outcomes. Overall, this strategic goal focuses on achieving positive safety outcomes for the transportation industry.

Budget Allocations are used to Maximize Output and Productivity[4]



4 The graphic illustrates the relationship between NTSB's and other submitted budgets. The first cover shows the President's budget to Congress which includes NTSB's funding. The second cover represents the NTSB budget, which is part of one of the 13 appropriations bills. The third cover shows the independent submission of NTSB's budget to Congress.

Strategic Goal #3 – Outstanding Stewardship of Resources

Summary

The NTSB ensures our limited dollars are used in the most efficient manner. With limited funding and approximately 400 employees, stewardship of resources must be outstanding. Therefore, Strategic Goal 3 cascades into the following specific strategic objectives:

- Employ project management best practices to maximize the effective use of agency resources while maintaining high quality;
- Effectively use the allocated funds to execute the mission; and
- Utilize effective information technology to accomplish the organization's mission.

Project planning principles are incorporated in all major efforts for these objectives, promoting efficiency in major work product outputs. The NTSB will increase our use of project management in all facets of our operations. This strategic goal focuses on the NTSB's efforts to efficiently use resources in a responsible and results-oriented manner while ensuring that the agency is able to fulfill our broad mission. We are committed to ensuring that the stewardship of resources—including the use of best practices in project planning, controlling costs, and deploying cost-effective technology—is reflected in the operating plans of all offices, both investigative and non-investigative. As the NTSB faces continuing challenges in meeting our mission in an environment of limited government resources, we will focus on office target levels to ensure that transportation safety remains of the highest importance while maintaining outstanding stewardship of resources.

Key Management Issues and Challenges

NTSB has a duty to ensure that the resources appropriated to it by Congress are expended in an efficient, responsible, and results-oriented manner. A large component of NTSB expenses is personnel, and, as a result, we must accomplish our mission within the current staffing levels in spite of the fact that the scope of our responsibility is broad and our team of dedicated employees is relatively small. To meet this challenge, we have been using our resources efficiently and are taking steps to ensure that we continue to make the most efficient and effective use of our staff, budget, information technology, and other resources.

Strategic Objectives

1. Employ Project Management Best Practices to Maximize the Effective Use of Agency Resources While Maintaining High Quality

We will evaluate our major work products and processes to identify best practices and to eliminate inefficiencies. Major work products include accident investigation reports, public hearings, and also complex administrative and information technology (IT) projects. The centerpiece of this strategy will be project planning, and all associated planned actions to increase project efficiency. Developing a project plan, coupled with post-project process assessment, will be a standard part of every major work effort. This strategy will promote efficient deployment of the agency's personnel, budget, and other resources. The NTSB has been instituting project management throughout the agency by deploying project management tools and best practices, piloting a new efficient model for the accident investigative process, and implementing project management curriculum and training at the Training Center.

2. Effectively Use the Allocated Funds to Execute the Mission

We have continually focused on accomplishing the agency mission within budgetary constraints and this will continue in the future. The Office of the Chief Financial Officer will ensure that offices are allocated funds in a timely manner. Within guidance provided for administrative control of funds, we will ensure that we develop spending plans that effectively use funds provided in office allocations. NTSB offices will monitor commitments to ensure timely processing and reconciliations of purchase card transactions. To ensure that resources are allocated to the highest and most urgent agency priorities, offices will submit proposals for resources that cannot be accommodated within initial allocations. Agency leadership will prioritize these proposals and provide decisions in a timely manner to facilitate reallocation of funds, including any necessary legal reviews. Offices also will ensure timely coordination with the General Counsel and the Chief Financial Officer for all reimbursable agreements.

3. Utilize Effective Information Technology to Accomplish the Organization's Mission

We will continue to use Information Technology (IT) to effectively capture data and information electronically at the earliest possible point and move data and information across the organization using sound business processes. Using a mixture of commercially available solutions and enhancements to in-house applications, we will deploy workflow solutions to improve the efficiency of operations in both modal and business support functions. We will work to address the changing nature of the Federal workforce and test, adopt and implement technologies designed to empower a highly mobile workforce that works in a variety of locations (on-scene, in the office, at home, etc.) and that is capable of sending and receiving information securely in electronic form with key constituents. Further, we will deploy software to transform how data and information are managed, shared and used by both internal

and external customers. NTSB stakeholders will have access to increasing amounts of data, information, and tools that will enhance our ability to identify trends, define key data relationships, and interact with a broad-based community on a wide variety of safety issues. Collectively, these efforts will leverage our ability to use IT as a key element in accomplishing the agency mission.

Key Performance Measures

Strategic Objective	Performance Measure	FY 08 Results	FY 09 Target	FY 09 Results	FY 10 Target	Performance Measure Type
3.1 Employ Project Management Best Practices to Maximize the Effective Use of Agency Resources While Maintaining High Quality	Percentage of Emergency Opinions and Orders Submitted on Time	100%	95%	100%	95%	Efficiency
	Percentage of Non-Emergency Opinions and Orders Submitted within 3 months of fully briefed	N/A	80%	97%	85%	Efficiency
3.2 Effectively Use the Allocated Funds to Execute the Mission	Timely issuance of budget allocations to NTSB Offices	N/A	N/A	N/A	10 business days	Efficiency
3.3 Utilize Effective Information Technology to Accomplish the Agency's Mission	Implementation of Information Technology Upgrades to Support Modal and Administrative Offices	N/A	N/A	N/A	3 upgrades	Output

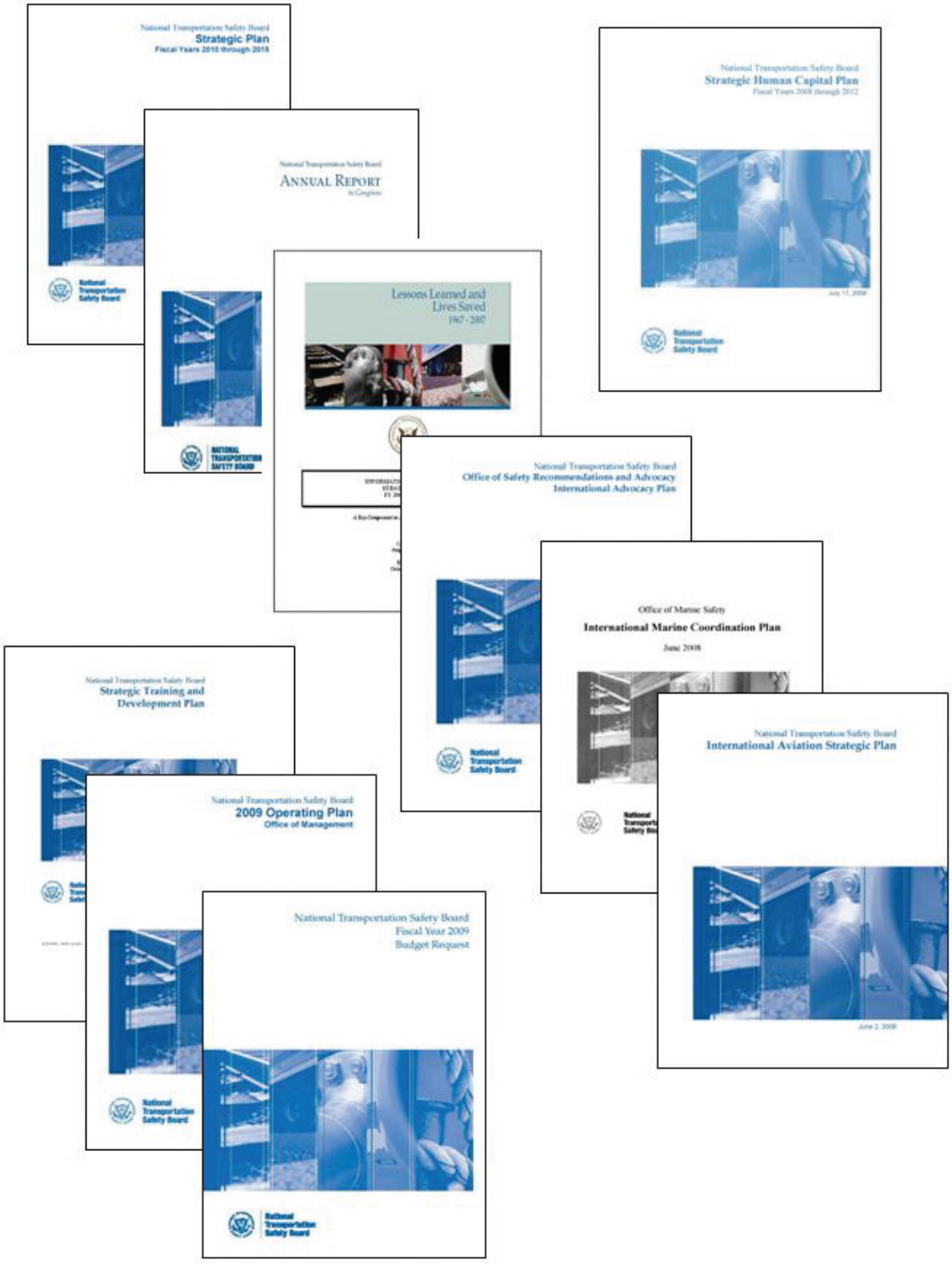
Discussion of Performance Measures

The central theme for all the measures is ensuring that the limited resources of the agency are protected and managed in a cost-effective manner. Each year, individual office operating plans identify specific performance measures tailored to their individual stewardship responsibilities. For example, the Office of the Chief Financial Officer has primary responsibility as the custodian of NTSB financial resources, but all offices and divisions are tasked to manage their resources effectively and efficiently. Also, the Office of Administration is responsible for the stewardship of facility resources and contracting activities. The Office of the Chief Information Officer has a number of responsibilities related to protecting computer hardware and software resources. And, the Office of the Managing Director is the chief steward for policies and procedures that promote safety and security. All of these offices make a direct contribution to the strategic goal of outstanding stewardship of resources. Key performance measures for this strategic goal focus on

ensuring that project management best practices are utilized in our internal processes. In addition, our outstanding stewardship of resources relies on an efficient budget allocation process and upgrading our information technology. Both of these considerations are included in our performance measure evaluation of this goal.

Strategic Goal #4

NTSB Planning Reports



Strategic Goal #4 – Organizational Excellence

Summary

The first three strategic goals are embodied in the fourth strategic goal, which captures the overall nature of the organization, namely excellence. Strategic Goal 4 is divided into the following objectives:

- Integrate long-range planning in all elements of NTSB business;
- Align and improve human capital planning;
- Maintain a competent and effective workforce through targeted training and employee development; and
- Foster effective internal communications.

Because the majority of NTSB expenses are employee salaries and benefits, human capital is the most valued organizational asset. This asset requires a long-term plan to ensure its success and capabilities. The strategic objectives for Strategic Goal 4 promote the outcomes of maintaining improved human capital, encouraging teamwork, and maintaining effective communications. This strategic goal emphasizes the NTSB's challenge to devote time and resources to thinking strategically and to developing staff, while maintaining the primary commitment to investigating transportation accidents. Investing in our employees underlies our ability to maintain our investigative readiness. Our highly trained employees are skilled in identifying emerging safety issues, fully prepared to investigate accidents that may involve any of those issues and support those whose mission is the safety of the traveling public. Finally, the goal promotes strategies to ensure we foster a work environment which embraces inclusiveness, equal opportunity, and diversity.

Key Management Issues and Challenges

The NTSB has earned a reputation for thorough and independent investigation of transportation accidents. To maintain that reputation, we are committed to the continuing development of our managerial, leadership, and workforce skills comparable to the quality of the accident investigations for which we are well-known. This initiative includes the entire NTSB organization—investigative offices, business support offices, and agency leadership. We are faced with the challenge of developing our workforce in an environment of technological changes and dwindling resources.

This challenge is addressed by effective long-range planning and excellent communications. Long-range planning in human capital management, as well as core operations, ensures that the NTSB is fully equipped to deal with any future investigative need. The NTSB's enhanced focus on planning results in staff and processes that are capable and flexible to deal with any and all issues and challenges. Effective communications at all levels of the organization ensure that we continually improve our plans and processes. We will devote

time and resources to thinking strategically and developing our staff. To achieve our long-term vision, we must effectively plan and communicate while maintaining our primary commitment to investigating transportation accidents. We believe that initiatives currently in place will provide the necessary balance to ensure success with this strategic goal.

Strategic Objectives

1. Integrate Long-range Planning in All Elements of NTSB Business

We will make strategic planning integral elements of how the NTSB conducts business. Consistent with the requirements set out in the Government Performance Results Act of 1993 (GPRA), we will develop a comprehensive multiyear strategic plan and issue a revised plan every 3 years. In addition to these revisions, we will conduct annual reviews and updates of our strategic goals and objectives, focusing on selected performance measures each year. In addition, we will develop and update long-range plans for all aspects of our operations, including internal communications, advocacy, human capital, training, and IT, all of which are in alignment with the NTSB Strategic Plan.

2. Align and Improve Human Capital Planning

We will ensure that the quality of our management and leadership is on par with the excellence of our accident investigations. In support of this initiative, we will develop a greater focus and teamwork among both our staff and line leadership. As part of this effort, the management team will meet regularly and will set cross-office goals.

We will continue to commit to investing in training, developing, and retaining employees, our most important and valuable asset, and will take steps to enhance our recruitment and hiring processes. We will select well-qualified applicants to fill vacancies and expand the NTSB's technical capabilities. Hiring such individuals is crucial to accomplishing our investigative mission. In addition, we will develop the skill sets of current staff through formal and informal training, as well as invest in cross-training to build individual employee skills and strengthen the NTSB's workforce. We will ensure successful achievement of these efforts through the implementation of the *Strategic Human Capital Plan* and the *Strategic Training and Development Plan*, two agency human resource plans which support human capital efforts. These two plans dovetail and complement each other, and each is directly aligned with the NTSB Strategic Plan. The Strategic Human Capital plan has eight key strategies to ensure the workforce is competent, the management team is fully aligned, and that human capital strategies are implemented using a project management approach. The eight objectives are listed here:

Human Capital Strategic Objectives

- Enhance the recruitment process for critical occupations to attract well-qualified applicants.
- Develop an NTSB Strategic Training Plan and ensure that workforce has access to continuing training opportunities.
- Provide for the continued recruitment and retention of a highly skilled diverse workforce.
- Raise level of awareness of supervisory and management officials regarding leadership and management as perceived by the workforce.
- Strengthen the Performance Management System to align with organizational goals and objectives
- Outline strategies for succession planning.
- Develop an NTSB Strategic Human Capital Plan that aligns with the NTSB Strategic Plan.
- Monitor and evaluate the execution of human capital strategic objectives via a project plan.

By using the OPM Human Capital Assessment and Accountability Framework (HCAAF), NTSB has segmented key courses of action into five critical components of human capital. These components are strategic alignment, leadership and knowledge management, results-oriented performance culture, talent management, and accountability. Implementation of our human capital plan already includes, or will include, a new performance management system, a redefinition of the job analysis process, alternative recruitment efforts, and an annual assessment of human capital management and compliance. All of this will be done with an intention to ensure the most diverse workforce available.

3. Maintain a Competent and Effective Workforce through Targeted Training and Employee Development

The investigative staff of the NTSB has a well-deserved reputation as the world's premier cadre of transportation accident investigators. However, NTSB workforce departures are one internal factor that could affect our ability to achieve organizational goals. Anticipated retirements may have a significant impact within the agency management levels during the next few years. Because the retirements will affect institutional knowledge, employee development is very important. Moreover, to function successfully, the workforce will require updated training to close the skills gap in a future environment that includes advanced management tools, and updated networking capabilities. We will ensure that staff has regular opportunities to participate in the advanced technical training and professional development essential to maintain and advance their critical investigative skills.

We will build our management and leadership skills for the long term. By doing so, we will ensure that we are prepared to fill the agency's leadership ranks. Our management team will ensure that all staff members have the opportunity to pursue training opportunities that will contribute to the development of their management, leadership, and jobspecific skills. We will ensure that management and leadership development is an integral part of annual performance planning. The *NTSB Strategic Training and Development Plan* is designed to complement the agency strategic plan by focusing on specific strategies and performance measures pertaining to training. The strategies are listed below:

Strategic Training & Development Objectives

- Ensure NTSB Training Programs are in Alignment with the Strategic Plan.
- Foster Leadership Commitment to Ensure Accomplishment of Training Objectives.
- Increase Competencies of the NTSB Workforce through Training and Development.
- Ensure the Training Curriculum Reflects Emerging Needs and the Best Strategies.
- Create an Environment of Continuous Improvement and Lifelong Learning.
- Ensure that the Evaluation of Training and Development Programs Promotes Continuous Improvement.
- Increase Available Pool of Successors for Designated Positions (Succession Management).

As the NTSB embarks on efforts to improve its strategic management of human capital, training and development will play a key role. The NTSB Strategic Training and Development Plan emphasizes leadership development and succession planning, which are critical for ensuring the agency's continued success in meeting our investigative mandate. Our succession management approach focuses on developing the talent pool at the agency through selection of individuals for the Management Development and Executive Development programs, as well as the roll-out and implementation of the overall succession management program for the agency. Our training initiatives are designed to ensure equal opportunity.

The Training and Development Plan highlights the models and best practices relied upon by the NTSB in reviewing, strategically aligning, improving, and charting a course for its training and development program. Our approach incorporates best practices from within and outside the agency, along with a plan for continuously evaluating our progress toward strategic training and development objectives derived from the agency's *Strategic Plan* and *Strategic Human Capital Plan*. Through implementation of these plans, the NTSB will be able to use our resources wisely to ensure our workforce possesses the necessary competencies to accomplish the agency's mission, both now and in the future.

4. Foster Effective Internal Communications

We will pursue a comprehensive strategy aimed at improving the quality of communication and cooperation across NTSB office boundaries and up and down the entire organization. Communication, cooperation, and teamwork will be included in management performance evaluations. Our Internal Communications Plan outlines a number of strategies and action steps to improve communication within the organization, as well as associated performance measures to gauge the level of success. The principal method we use to evaluate improved communications is the biennial (formerly annual) communications survey, which has been conducted three times thus far. This survey results have shown noted improvements over the 3-year period and we expect positive communications to continue to grow at all levels of the organization.

Key Performance Measures

Strategic Objective	Performance Measure	FY 08 Results	FY 09 Target	FY 09 Results	FY 10 Target	Performance Measure Type
4.1 Integrate long-range planning in all elements of NTSB business	Publish Annual Report to Congress	Report Published	2008 report	Report Published	2009 report	Output
	Publish Updated IT Strategic Plan	Plan Published	2009 plan	Plan Published	2010 plan	Output
	Maintain Auditable Financial Information	Auditable Financial Statements	Auditable Financial Statements	Auditable Financial Statements	Auditable Financial Statements	Outcome
4.2 Align and improve human capital planning	Complete Human Capital Management Report	N/A	N/A	N/A	1 report	Output
	Reduce Rate of Work-Related Injuries and Illnesses per 100 Employees	1.95	1.99	2.30	2.00	Outcome
4.3 Maintain a competent and effective workforce through targeted training and employee development	Development and Implementation of Succession Management program	N/A	N/A	Components Implemented	Implement program	Output
4.4 Foster effective internal communications	Percentage of employees who are satisfied or very satisfied with effectiveness of communications	81%	Varies by Office (up to 75%)	Varies by Office (Successful Overall)	Biennial	Outcome

Discussion of Performance Measures

To ensure that the agency is actively engaged in long-range planning, the NTSB has designated a series of plans that are to be completed (or updated) each year. We expect that a number of additional plans will be developed and published during the next five years, beyond our recent accomplishments in external reporting of key plans. For example, our yearly review of completed and ongoing accident investigations is detailed in the *Annual Report to Congress.* This plan has shown continuous improvement in recent years. Human capital planning is primarily gauged on implemented actions from the *Strategic Human Capital Plan*. The human capital management report details those implemented actions. In addition, with the development and publication of the *Strategic Training and Development Plan*–which operates in tandem with the *Strategic Human Capital Plan*–the NTSB has committed to additional specific performance measures pertaining to training and development. Finally, the *IT Strategic Plan*, which is updated each year, identifies improvements in our IT infrastructure. Examples of recent training initiatives include the implementation of a succession management program to include selection of individuals for leadership development programs, evaluation and update of the Training Center curriculum, and completion of yearly individual development plans. To improve agency communications, we will rely on results from the biennial communications survey and actions taken to improve communications which are described in the *Internal Communications Plan*.

Environmental Analysis

The NTSB's ability to achieve our strategic goals may be influenced by the changing balance of industry operations, other federal, state, and local government activities, national priorities, market forces, and resource availability. This section discusses significant external and internal factors that could significantly impair the agency's ability to achieve our strategic goals.

External Factors

Demographic Trends

Within the next 25 years, the U.S. population is estimated to grow to 364 million, up from 282 million in 2000. Highway vehicle miles of travel are projected to increase by approximately 60 percent from 2000 to 2030, potentially leading to much higher numbers of highway crashes and fatalities. Protecting segments of the population who remain at heightened risk–including teenage and older drivers, motorcyclists, and rural residents–will require targeted safety programs. Significant increases in the older population (the number of people between the ages of 65 and 84 will increase by 114 percent from 2000 to 2050) will pose greater highway and motor vehicle safety challenges, whether older Americans are drivers or passengers.

Major Transportation Disasters

One or more catastrophic transportation accident could severely affect the NTSB's ability to achieve our strategic goals. When catastrophic accidents occur, there is often a high level of industry, political, and public concern to determine the cause. This concern, combined with the complexity that often accompanies the investigation of transportation disasters, will require the time and attention of an undetermined number of the most skilled and experienced investigators at the agency.

New Technologies

Technological development in the transportation industry could pose a significant challenge in the achievement of our goals. Dramatic technological developments could outstrip our ability to train staff and redeploy resources. Among the developments we expect are hydrogen-fueled automobiles, increased use of composite materials, increasingly complex avionics, and increased operations of unmanned aerial vehicles, ultralight jets, and personal-use aircraft. Our work with Emerging Issues will help address these technology challenges.

The NTSB has issued several recommendations concerning the implementation of technologies to improve highway safety. These technologies include adaptive cruise control, brake assist, anti-lock braking systems, advanced airbags, backing-up warning sensors, drowsy driver monitoring, warning devices for specific types of impending crashes

(rear-end, lane/road departure, intersection), and systems that take control of the vehicle in certain circumstances, such as electronic stability control, rollover prevention, and alcohol detection.

Additional occupant protection improvements, including advanced vehicle structures, safety belt/ignition-interlock systems, airbags and other interior protection features will reduce injuries and fatalities when crashes occur. For example, immediately after impact, onboard communications could automatically notify rescue services of a crash, its location, and probable extent of injuries based on onboard sensors. As these and other technologies become widely used, NTSB staff will need to be fully engaged in learning about developments in these areas in order to produce salient recommendations that continue to raise the bar on safety.

Budgetary Constraints

Any major decrease in resources devoted to the NTSB and accident investigation will have a negative impact on the agency's ability to achieve our goals for this planning period. Although the fiscal year 2009 federal budget provided a resource increase for the NTSB, this may not be a recurring occurrence. The growth in the federal budget deficit in recent years, including the explosive increase in 2009, means that the current administration will need to address these shortfalls. Because federal agencies, including NTSB, must absorb personnel expenses, e.g. within-grade pay increases and annual cost-of-living adjustments, a budget increase is necessary just to maintain the salaries of the current staffing level. Therefore, a flat budget for a subsequent year implies that staff levels must decrease in order to absorb the salary adjustments. If this occurs, the NTSB will be in a more difficult position to meet our investigative mandate if budget constraints necessitate a reduction in staffing.

Internal Factors

Staffing Shortages Due to Retirements

The average age of NTSB employees is 48.6 years, almost 2 years older than the government-wide average. The NTSB workforce also includes considerably fewer employees under the age of 35, which is likely due to the need for investigative staff to possess broad industry knowledge in addition to investigative or related skills. Developing this diverse skill set usually occurs over a period of years—which is why midcareer accessions dominate among investigative and some other occupational specialties at the NTSB.

Twenty-one percent of investigators and more than a quarter (27 percent) of the agency's senior executives are age 60 or older; nearly 20 percent of the NTSB workforce is currently eligible to retire. Although historical trends indicate that only a portion of employees eligible to retire actually do so, the time needed to cultivate future leaders warrants serious attention to succession planning to ensure continuity of leadership. And because many of the investigative personnel occupy positions requiring unique expertise, the failure to anticipate and prepare for their eventual retirement could leave the NTSB severely hampered in our ability to accomplish our investigative mission.

Skill Gap Issues

To be successful, the NTSB relies on the outstanding skills and professionalism of our employees. As stated above, NTSB workforce departures are the one internal factor that could affect our ability to achieve organizational goals. In addition, due to budgetary reasons, anticipated retirements may have a significant impact within the agency management levels during the next few years. Because the retirements will affect institutional knowledge, the training of successors is of paramount importance. Moreover, to function successfully, the aging workforce likely will require updated training to close the skills gap in a future environment that includes advanced management tools, new hardware and software platforms, and updated networking capabilities. Aggressive marketing, outreach, and recruitment initiatives will be necessary to attract highly skilled and diverse candidates to staff the next generation of employees and managers. We have been working to identify a number of competency and skills groups that might experience significant gaps if training and recruitment efforts are not successful. In some cases, these competency groups are experiencing gaps at the present time. The *Strategic Human Capital Plan* calls for a Talent Management system which will address competency gaps–particularly in mission-critical occupations–by implementing and maintaining programs to attract, acquire, develop, promote, and retain quality talent. The NTSB Talent Management courses of action, along with strategies and action steps described in the Training and Development Plan will help reduce skill gaps at this agency.

Succession Management

The NTSB uses the Office of Personnel Management's (OPM) Strategic Leadership Management Model to assist in planning, implementing, and evaluating our succession management program. The model uses a five-step approach to the succession management process: (1) Establish strategic alignment; (2) Identify succession targets (positions) and analyze talent pool; (3) Develop Succession Management Plan; (4) Implement Succession Management Plan; and (5) Evaluate Succession Strategies. Even with this systematic succession planning approach, the agency faces significant challenges in filling leadership positions in the future.

Mindful of the large number of retirement-eligible employees in the workforce and the need for highly specialized knowledge in the face of rapidly changing technology, the NTSB is committed to succession planning to avoid the potential for disruption in the effective management of the agency. A pool of candidates must be developed to ensure that when key vacancies arise, someone with the requisite competencies is available to step in and provide continuity of leadership. Moreover, the pool must be sufficiently large to ensure the likelihood that the ideal mix of skills can be found and that the merit system principles inherent in open competition are truly practicable. In addition to building the pool through our efforts to improve training across the board, the agency has embraced the need for additional sources of diverse candidates as part of a viable succession plan that ensures equal opportunity and adheres to merit system principles.

Strategic Plan Evaluation

Importance of Evaluation

Evaluation is the systematic collection of information about the activities, characteristics, and outcomes of programs and activities for the purpose of making judgments about the program and improving program effectiveness. Program evaluation is one of the three major elements of the GPRA, which calls for agencies to use program evaluations to assess the manner and extent to which federal programs achieve intended objectives. It further calls for an agency's performance plan to include a summary of the findings of program evaluations completed in the fiscal year covered in the report. Moreover, GPRA calls for a schedule for future program evaluations to be presented in strategic plans.

The NTSB's yearly reassessment of strategic objectives and performance measures contributes to improving program performance, as well as improving overall agency performance, and helps the agency determine short-term and long-term outcome results. This evaluation will continue with the ongoing review of the NTSB office operating plans, which contain the specific target levels for individual performance measures. Focusing on outcome evaluation, which assesses the extent to which programs achieve outcome-oriented objectives, allows the agency to identify the necessary relationships between activities, strategies, and end-results. This reinforces that the annual operating plans must be aligned with the strategic plan and the overall mission of the agency, which is improving transportation safety. These concepts are embedded in the NTSB's planning process. Effective evaluation starts and ends with using reliable data as an indicator for success.

Internal Controls

The NTSB developed and implemented an internal process that assigns roles and responsibilities for data collection, analysis, and reporting of performance information and that was published in an internal document (Operations Bulletin OPS-GEN-111, "Operating Plan Performance Measure Tracking"). The bulletin details procedures for incorporating the responsibilities of management and the "planning liaisons" for each office, as well as the role of the Strategic Management Division, which has overall responsibility for performance reporting at the agency. Creating appropriate distributions of responsibilities ensures that there are several levels of internal control since the system allows for review and comments on performance measure achievement. By working with each specific office, Strategic Management can ensure systematic and consistent data reporting, which contributes to increased information accountability and process control. Collaboration and internal controls are a key part of the agency's evaluation program.

Data Reliability

Another key evaluation component is data reliability. To that end, the NTSB has developed a technique for ensuring data reliability by incorporating a concept called the "performance measure definition" into the operating plan development process. The definition includes a detailed description of the source of data, the method of calculation, the manner of reporting, and any possible limitations to interpreting the data. By incorporating the performance measure definition into the process, the NTSB has created a formal mechanism that ensures data is reliable during the development, approval, and monitoring of performance measures. In addition, the process adds office accountability performance measures throughout the reporting period.

With reliable data, the agency is able to interpret performance measures data and assign a color code to indicate the performance level. Data collection and analysis are improved and allow for results reporting and the comparison of program performance over time.

Evaluation and the Planning Process

The NTSB's approach to performance measure evaluation has helped drive the agency's overall planning process. Over the last three years, the planning process has been improved by better collection techniques and the incorporation of the performance measure definitions for all operating plans. Overall, the NTSB has improved the selection and evaluation of our performance measures, resulting in measures that are more reliable, trackable, and more aligned with strategic objectives in the strategic plan. This approach will continue into the future and will result in additional improvements to the evaluation of the NTSB planning process.

Planning Process

The NTSB published our previous strategic plan in fiscal year 2007. Also in fiscal year 2007, each of the 12 NTSB offices produced an operating plan containing specific performance measures linked to the agency's strategic plan. In the spring of 2007, the NTSB created a Strategic Management Division within the Office of Management to serve as an improvement advocate and steward for the agency's strategic planning activities. The establishment of this specific function and the overall planning and performance management structure were intended to institute further results-based program management linked directly to the agency's strategic goals. All NTSB activities and programs are aligned with the strategic goals, and individual performance is measured against them.

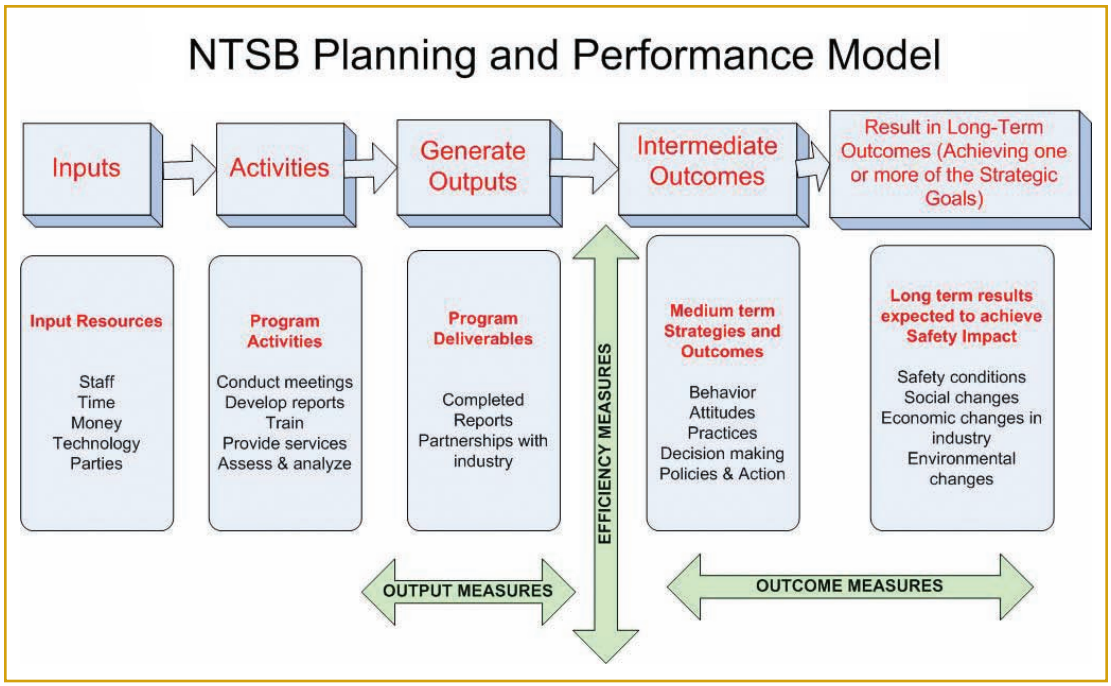


Figure 6: NTSB Planning and Performance Model

As figure 6 illustrates, the NTSB uses a logic model approach to ensure that program activities and outputs contribute to safety outcomes. Each set of deliverables for each node in the model contributes to a higher level deliverable. For example, the NTSB devotes staff (inputs), who develop reports (activities), which lead to completed reports (outputs). Ultimately, NTSB reports result in regulatory action (intermediate outcomes), which result in long-term safety benefits to society. As the green arrows show, performance measures are constructed to measure success at various levels of the model.

Planning Framework

To ensure the implementation of our strategic plan, the NTSB developed 17 specific strategic objectives, which are linked to one of the four strategic goals. These objectives form the basis for linking the strategic plan with agency activities. Each of the NTSB's offices is required to develop annual operating plan performance measures that link to relevant agency strategic objectives and must also ensure that each operating plan submission is closely aligned with the agency's strategic plan. Starting in fiscal year 2010, each office's operating plan will be combined into one overall NTSB Operating Plan.

The NTSB's performance measures focus on both internal outcomes to improve agency operations, as well as on outcomes that will lead to overall safety improvements in the transportation industry. Performance measure selection and tracking reflect the agency's view that our accomplishments result in significant outcomes that improve transportation safety and that planning documentation shows this important relationship.

The number of overall agency performance measures tracked has become more focused over time. In 2008, the agency monitored more than 350 performance measures. In 2009, the number of measures was reduced to 136, of which 49 were considered outcome-type measures. The rest of the measures were either output- or efficiency-type measures (see figure 7). The overall progress and results achieved were included in the NTSB organizational assessment in the fall 2008 *Performance and Accountability Report*. In addition, in December 2008, the agency published a one-page performance summary of our 2008 results in a further effort to enhance transparency. Performance data for fiscal year 2008 was included in the fiscal year *2008 Annual Report to Congress*. Performance data are also included in this strategic plan and will be included in the fiscal year 2010 operating plan. Overall, the NTSB has greatly increased its performance reporting and transparency in the last several years.

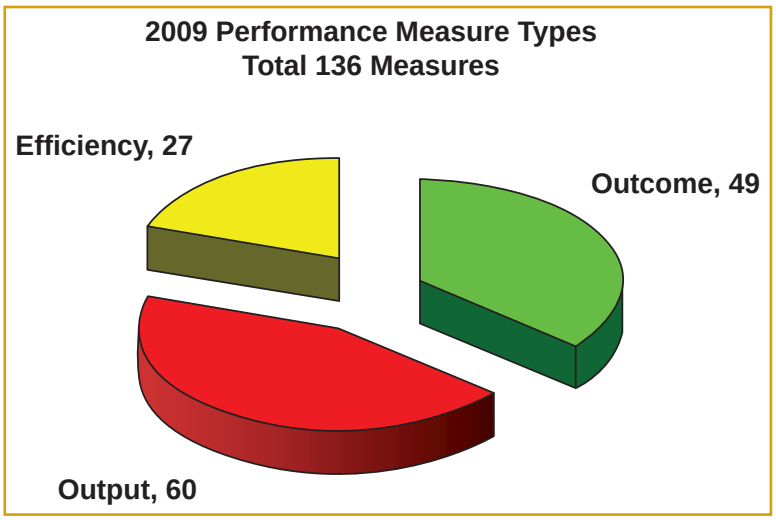


Figure 7: 2009 NTSB Performance Measure Types

Each element in every senior executive's individual performance plan is directly linked to one of the four strategic goals, indicating the element's importance in contributing to that goal. Each senior executive performance plan, in turn, reflects the performance measure target levels that are in his or her respective office operating plan. This one-to-one correspondence between an office operating plan and a senior executive's performance plan ensures that agency leaders are held accountable in concert with the strategic plan.

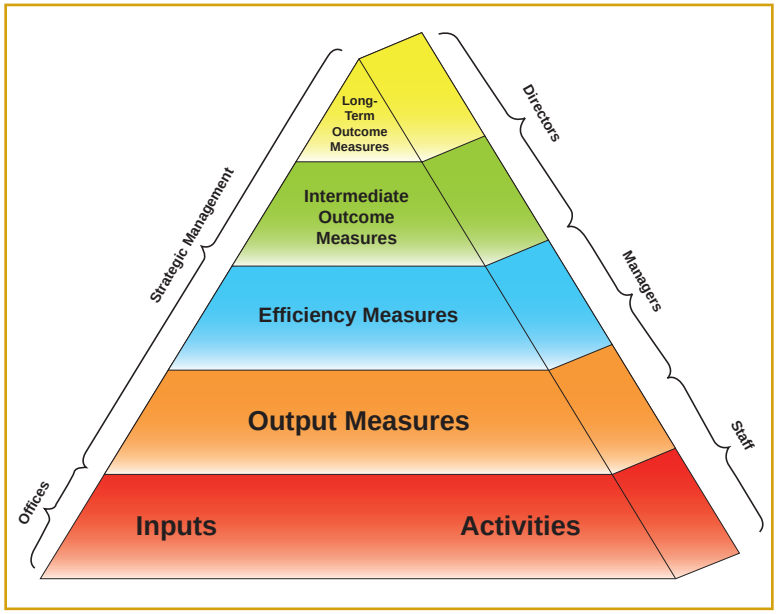


Figure 8: NTSB Performance Measure Pyramid

Building on these strategic planning successes—including the updated senior executive performance plans—the NTSB also has implemented a new strategic performance management system for all general schedule supervisors and investigative staff. In essence, each NTSB employee has a performance plan that flows from a supervising senior executive's performance plan and, thus, is linked to the agency strategic plan. Moreover, each supervisory performance plan includes certain performance elements—such as leadership—that are standardized throughout the agency, as well as other job-specific performance elements. This initiative has promoted greater understanding of performance management at the NTSB. Since this process is now complete, every NTSB employee is working in alignment with and measured by a performance plan that is coupled with the agency's overall strategic plan. In general, higher level managers have individual performance objectives that are outcome-type measures, whereas first-line supervisors have output-type measures. In some cases, employees at the staff level may have individual performance metrics that are heavily influenced by activities. These different types of measures form a performance measure pyramid (see figure 8) and serves as the basis for constructing agency and individual performance plans.

Strategic Plan Summary

In the future, the NTSB will work toward continuing to reduce the number of performance measures it will track for external reporting. We believe that all types of measures are important, but, for the purpose of identifying the needs and benefits of the public, only long-term outcome measures and selected output measures should be externally reported. Activity-type measures are better reflected at the office level, rather than in the main operating plan. The NTSB has worked toward combining all 12 operating plans into one NTSB Operating Plan. The office plans will roll up into the NTSB plan and mainly focus on those key performance measures that show long-term outcomes and outputs that yield safety improvements in the transportation industry.

In 2010, the NTSB will place greater emphasis on outcome-based performance measures. By focusing on results-oriented performance measures, management attention has been directed toward important agency activities, resulting in improved agency operations. In addition, these improvements directly influence the 17 strategic objectives which, in turn, contribute to achieving the 4 strategic goals. Finally, by inserting the operating plan measures into all employees' performance plans, the NTSB promotes accountability for achieving agency goals at an individual level, as the office operating plan measures are tracked and evaluated during the year. The agency is optimistic that our results-oriented culture will continue to evolve and promote better governance in the future and improve transportation safety, which is the overall mission of the NTSB. Interested parties can access an electronic version of the *2010-2015 Strategic Plan* on the web or send email inquiries to strategicplan@ntsb.gov.

Other NTSB Planning Resources

- **Annual Report:** The *NTSB Annual Report to Congress* is published yearly and contains a summary of new and ongoing accident investigations. It also includes material on the role of advocacy of the Most Wanted List, the use of enhanced technology to support the NTSB mission, and contains a performance summary.
- **Performance and Accountability Reports:** The *Performance and Accountability Report (2008, 2009)* is published annually and contains significant financial and performance-related data for the agency. Elements include a management discussion and analysis, an organizational assessment, an independent auditor's report, a balance sheet, and other financial statements.
- **Operating Plans:** Each NTSB organizational unit develops and publishes an operating plan, which contains specific strategies and performance measures for each office. Each plan contains outcome, output, and efficiency performance measures. For 2010 and beyond, there will be one overall NTSB Operating Plan. For more information and copies of plans, please contact the NTSB directly.
- **Strategic Human Capital Plan:** The *NTSB Strategic Human Capital Plan* contains the agency's overall framework for human capital planning, based on OPM's Workforce Planning model. It identifies a responsive course of action with responsibilities and outcomes, utilizing the Office of Personnel Management's succession management, and human capital assessment and accountability concepts and methodology.
- **Strategic Training and Development Plan:** The NTSB 2010-2015 *Strategic Training and Development Plan* outlines the relationship between training initiatives at the agency and the Human Capital Plan. The plan contains specific training strategies, describes efforts to reduce gaps in NTSB competencies, and details the agency's initiatives to address succession planning.
- **IT Strategic Plan:** The *NTSB IT Strategic Plan* outlines the NTSB's long-term approach to address IT issues, within the broad confines of Clinger-Cohen and *Federal Information Security Management Act* requirements. It discusses in detail the NTSB's seven IT strategic goals and short- and long-term strategies to achieve those goals.
- **2008 Performance Summary:** The NTSB *Performance Highlights Summary* was published in December 2008 and shows the achievement of fiscal year 2008 operating plan performance measures. It also contains a description of the planning process and a comparison of total performance measures in fiscal years 2008 and 2009.

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